

Claims

1. A method for aiding a driver in backing a motor vehicle, comprising the steps of:

detecting when a motor vehicle is placed in a reverse direction;
visually displaying an image of an area at a rear of the motor vehicle provided by a camera on a monitor when the motor vehicle is placed in the reverse direction, wherein the monitor is positioned to be visually accessible by a driver of the motor vehicle;

sensing a distance to an object that is within a path of the motor vehicle with a radar sensor when the motor vehicle is placed in the reverse direction;

providing a warning when the object is within a predetermined collision distance; and

detecting when the motor vehicle is placed in a forward direction, wherein the display of the image is discontinued when the motor vehicle is placed in the forward direction.

2. The method of claim 1, further including the step of:
visually displaying a distance indicator on the monitor, wherein the distance indicator provides an indication of a distance to a sensed object when the motor vehicle is placed in the reverse direction.

3. The method of claim 1, wherein the warning is an audible warning.

4. The method of claim 1, wherein the warning is one of a directional audible warning, a visual warning and a vibrational warning.

5. The method of claim 1, wherein the radar sensor operates at about 17 GHz.

6. The method of claim 1, wherein the monitor is a liquid crystal display (LCD).

7. The method of claim 1, wherein the radar sensor provides coverage up to about 16.4 feet from the rear of the motor vehicle and the camera provides coverage up to about 5 feet from the rear of the motor vehicle.

8. A back-up system for a motor vehicle, comprising:
a camera located to view an area at a rear of a motor vehicle;
a processor coupled to the camera;
a monitor coupled to the processor, the monitor displaying images provided by the camera;
a radar sensor coupled to the processor, wherein the radar sensor provides a radar signal that is used to sense a distance to an object that is within a path of the motor vehicle when the motor vehicle is placed in a reverse direction; and
a memory subsystem coupled to the processor, the memory subsystem storing code that when executed by the processor causes the processor to perform the steps of:
detecting when the motor vehicle is placed in the reverse direction;
visually displaying an image of the area at the rear of the motor vehicle on the monitor when the motor vehicle is placed in the reverse direction, wherein the monitor is positioned to be visually accessible by a driver of the motor vehicle;
sensing a distance to an object that is within a path of the motor vehicle with the radar sensor when the motor vehicle is placed in the reverse direction;
providing a warning when the object is within a predetermined collision distance; and

detecting when the motor vehicle is placed in a forward direction, wherein the display of the image is discontinued when the motor vehicle is placed in the forward direction.

9. The system of claim 8, wherein the code when executed allows the processor to perform the additional step of:

visually displaying a distance indicator on the monitor, wherein the distance indicator provides an indication of a distance to a sensed object when the motor vehicle is placed in the reverse direction.

10. The system of claim 8, wherein the warning is an audible warning.

11. The system of claim 8, wherein the warning is one of a directional audible warning, a visual warning and a vibrational warning.

12. The system of claim 8, wherein the radar sensor operates at about 17 GHz.

13. The system of claim 8, wherein the monitor is a liquid crystal display (LCD)

14. The system of claim 8, wherein the radar sensor provides coverage up to about 16.4 feet from the rear of the motor vehicle and the camera provides coverage up to about 5 feet from the rear of the motor vehicle.

15. A back-up system for a motor vehicle, comprising:
a camera located to view an area at a rear of a motor vehicle;
a processor coupled to the camera;
a monitor coupled to the processor, the monitor displaying images provided by the camera;

a radar sensor coupled to the processor, wherein the radar sensor provides a radar signal that is used to sense a distance to an object that is within a path of the motor vehicle when the motor vehicle is placed in a reverse direction;

a speaker coupled to the processor; and

a memory subsystem coupled to the processor, the memory subsystem storing code that when executed by the processor causes the processor to perform the steps of:

detecting when the motor vehicle is placed in the reverse direction;

visually displaying an image of the area at the rear of the motor vehicle on the monitor when the motor vehicle is placed in the reverse direction, wherein the monitor is positioned to be visually accessible by a driver of the motor vehicle;

sensing a distance to an object that is within a path of the motor vehicle with the radar sensor when the motor vehicle is placed in the reverse direction;

providing an audible warning over the speaker when the object is within a predetermined collision distance; and

detecting when the motor vehicle is placed in a forward direction, wherein the display of the image is discontinued when the motor vehicle is placed in the forward direction.

16. The system of claim 15, wherein the code when executed allows the processor to perform the additional step of:

visually displaying a distance indicator on the monitor, wherein the distance indicator provides an indication of a distance to a sensed object when the motor vehicle is placed in the reverse direction.

17. The system of claim 15, wherein the radar sensor operates at about 17 GHz.

18. The system of claim 15, wherein the monitor is a liquid crystal display (LCD).

19. The system of claim 15, wherein the radar sensor provides coverage up to about 16.4 feet from the rear of the motor vehicle and the camera provides coverage up to about 5 feet from the rear of the motor vehicle.